TABLE 817.03 - DESIGN REQUIREMENTS

CLASS DESIGNATION	MIN. 28 DAY COMPRESSIVE STRENGTH (psi)[a]	MIN. CEMENT CONTENT (LBS/YD^3)	MAX. WATER (LBS. WATER PER LBS. CEMENT)	COARSE AGGREGATE SIZE No.[b]	SLUMP (IN.)[C]	FIELD AIR CONTENT (% BY VOL.)	MAX. UNIT WEIGHT (LBS./FT.^{3})
A[dg] STRUCTURAL TRAP ROCK	4,500	658	0.44	57 or 67	2-3	5-7.5	
B[dgh] STRUCTURAL	4,500	658	0.44	57 or 67	2-3	5-7.5	
C[dk] HIGH EARLY	3,000[(24 HRS)]	800	0.38	57	0-3	4-8	
D[dgh] PRESTRESSED	5,000	680	0.43	57	0-4	4-8	
E[dgh] PAVING	3,500	565	0.49	57[j], 57 & 4 or 67 & 4	0-3	4-8	
F[gh] GENERAL	3,500	565	0.49	67, 57, 57 & 4 or 67 & 4	1-5	4-8	
G PIPE CRADLE (ONLY)	2,500	470	0.55	67, 57	1-5	4-8	
H1[dgi] LIGHTWEIGHT	4,000	658	0.44	3/4 to 4	0-4	5.5-8	122-PLASTIC 117- 28 DAD*
H2[gi] LIGHTWEIGHT	4,000	658	0.44	3/4 to 4	0-4	5.5-8	115-PLASTIC 110-28 DAD*
I[dgh] LOW SLUMP	4,500	820	0.45	78[b]	1 MAX.	5.5-7	
J[de] LATEX MODIFIED	4,000	660	0.40	7	4-6	3-7	

*DAD = Day Air Dry

a. The Materials Engineer may approve mix designs, pending 28 day strength results based on the 7 day compressive strength which results that equals or exceeds 85 percent of the compressive strength and provided that no accelerator or early strength cements are used (except for Class "C"). The compressive strength is defined as the average of 2 cylinders made in the field and cured in the laboratory.

b. Crushed trap rock shall be used in class I Low Slump concrete if used in concrete for bridge deck, sidewalk and for median superstructures. Polish susceptible aggregates as defined in 402.02(E) shall not be used for concrete pavement surfaces.

c. A maximum slump as limited by the mix design will be allowed for concrete approved with water reducing admixtures. High range water reducer may be used for concrete to be placed at higher slump with the approval of the Engineer provided that there is no aggregate segregation and the entrained air of the concrete at point of placement is within acceptable range.

d. Polish susceptible fine aggregates as defined in 402.02(E) shall not be used for concrete pavement surfaces.

e. Latex emulsion shall not exceed 3.5 gallons per 100 pounds cement. The latex will weigh approximately 8.40 to 8.55 pounds per gallon.

f. latex emulsion is included as part of the maximum water.

g. Fly ash may be substituted for cement such that not more than 15 percent by weight of cement is removed. The mix may require more fly ash added than cement removed. Cement factor and water-cement ratio determined on basis of combined fly ash (replacing the cement) and cement weight. Granulated slag may be used in an amount not to exceed 40 percent by weight of cement. Cement factor and water-cement ratio is determined on basis of combined granulated slag and cement. Fly ash and granulated slag may not be used in the same mixture for cement substitute.

h. The chert content of the combined coarse aggregate shall be less than 3.0 percent as per AASHTO M80 Class A.

i. Coarse and Fine aggregate shall conform to 803.07.

j. minimum of 15 percent retained on the 3/4 inch sieve.

k. Must be approved by the Engineer prior to use.